Pre-emergence Spray For Weed Control In Sugar Beets Seeded In Undisturbed Soil Successful

W. W. Robbins and Roy Bailer

Preliminary field tests on the University Farm, Davis, indicate that pre-emergence spraying offers promise as one method of controlling weeds in sugar beets. The method may be applicable to other row crops. The field tests were as follows: In December the field was disked and flooded; a portion of the area was left flat, the remainder ridged and formed into beds; the field was left in this condition throughout the mostly in the seedling stage. Decorated sugar beet seed was drilled in at three different depths: 1 inch, 1/2 inches, and 2 inches. A

Bulk Handling of Milk By The Ranch To Factory System

E. L. Jack and R. L. Perry

Milk-holding tanks on dairy farms, used in conjunction with milk trucks, are bringing about savings to the dairyman, and to the milk buyer through the elimination of the ten-gallon milk cart.

Traditionally, milk on the farm is run over a cooler to bring the temperature down below 30°F. It goes from the cooler directly into a ten-gallon can where it is held in a cold room until hauled to the milk plant.

In this new method the milk goes into a large storage tank on the farm instead of into the cans. It is pumped from the storage tank into a tank truck and hauled to the milk plant.

This bulk-handling method saves a considerable amount in handling; does away with handling the cans on the farm, and in the plant; the milk that is in the plant; recovers more milk than is possible in cans; and does away with can washing.

Direct Benefits to Dairyman

Some of these savings benefit the dairyman directly. He does not have to have someone attend the cooler during milking to fill the cans and put them in the cold room. On larger dairies this one feature alone may save the dairyman many dollars a year.

The dairyman also gains directly in the amount of milk for which he is paid. Under the tank system he is paid for all 105 lb. of milk that is as in the tank when the truck arrives. It is measured there directly. Under the can system he is paid only for the amount of milk that drains from the cans and is recaptured in the plant recovering plant. Approximately one-eighth of a pint of milk from each can is therefore not weighed. This additional recovery of milk water is brought about by one firm to increase the annual receipts of a dairyman shipping twenty cans per day by 500 pounds a year.

There is also a great savings in handling. A ten-gallon milk can which holds 86 pounds of milk weighs in the pails at the ranch. It is empty when empty. This means that approximating the milk which is used in all the total load of milk in cans contains water weight, rather than milk weight. At prevailing rates milk has a value in tank trucks from ranch to factory from one-and-one-half cents per gallon cheaper than in ten-gallon cans.

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Water Infiltration Rates Into Yolo Loam Studied To Determine Irrigation Efficiency Factors

Arthur F. Pillsbury

Water infiltration rates into Yolo loam during irrigation were measured in 96 basins in a series of experiments conducted in Los Angeles County over a period of five years. Several different treatments were carried on, permitting the isolating of a number of factors which influence the rate of water entry into the soil.

Organic Matter

Organic matter is known to improve soil structure and infiltration rates, but the belief often prevailed that to do so it must be incorporated into the soil.

Applications of straw or other crop residue as a mulch were found to be at least as valuable on the surface as when incorporated in the soil—provided they were kept reasonably moist. The mulch raised the infiltration rate some 40 per cent but had little effect when dry. In general, there was insufficient flow through the summer to cause appreciable water infiltration rate increases. After a mulch had been in place for a year, it increased in the rates of water infiltration, the percentages being seven times greater than the rates in plots without mulches.

Benefits from organic matter are largely from the products of the soil microorganisms which are carried into the soil by the water. The

Since organic matter mulch shades (Continued on page 2)

Citrus Orchard Cost Study And Analysis Made In Orange County Over 21-Year Period Is Reported

Harold E. Wahlberg

Over one hundred citrus growers in Orange County have cooperated with the Agricultural Extension Service in the past 21 years in a cost study and analysis of orchard management.

The growers furnished detailed cost data and had operated on a year-round basis. The reports were summarized and divided into two groups—those who had never had orchards and those who had maintained orchards since 1918. The results were gathered for the entire study. A wide range of costs was reported in most items.

Fertilization

Fertilization is an example of the wide range of operational costs. In 1946, one grower reported a fertilizing cost of $137.18 per acre. Another grower spent only $7.16 per acre. The best 20 orchards averaged $41.01 per acre and the average of all of orchards was $33.45 per acre.

In most years the orchards with the highest fertilizing costs were those with the top orchards. The extra dollars spent, often for the more expensive mixtures, did not justify the added expense.

It appears from these studies that about three pounds of nitrogen per mature tree, in normal leaf, is optimum. Very large doses may use four to five pounds.

Last year, three pounds of nitrogen per tree at 80 trees per acre, cost (Continued on page 3)
Pre-emergence Spray For Weed Control In Sugar Beets Seeded In Undisturbed Soil Successful

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There was no disturbance of the soil as the seed was drilled in the usual manner. There was no appreciable weed pressure which at the time, were within the upper quarter-inch zone, and they were not disturbed. If, as is the usual practice, the field is well cultivated, many weeds are controlled by cultivating, the sitting of the drill, and the trash that remains on the surface and soon another crop of weeds appears.

Prior to emergence Sprays

Emergence may be delayed until the seedlings have attained considerable size. There was no disturbance of the beds by cultivating which for the most part was unnecessary from the standpoint of agriculture, as seed productions were more than adequate to meet the need.

Average Results of Pre-emergence Sprays (All depths of planting)

<table>
<thead>
<tr>
<th>Spray Treatment</th>
<th>Germination Seeds Stands</th>
<th>Reductions in Germination Seeds Stands %</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>1. Diesel oil and Dow General*</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>2. Diesel oil and Dow General*</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>3. Diesel oil and Dow General*</td>
<td>85%</td>
<td>15%</td>
</tr>
</tbody>
</table>

*Active ingredient, dinitrophenol secondary butyl phenoxy.

Most of the above results were obtained on beds which had no previous planting for 30 gallons per acre, while certain plots were covered at rate of 33 gallons per acre.

Results

The results may be summed up as follows:

1. Applications gave satisfactory weed kill.
2. The rate of kill was more rapid in the case of those sprays which were "fortified" with Dow General and pen- tachlorophenol than those of equal rate of application.
3. There was no disturbance of the beds by cultivating which, in the case of those sprays which killed the weeds this is a very material saving.

Before the far around 80% of the sugar beet seeds were planted, mainly to central and northwestern California, and the remainder of the seed production was shipped to other parts of the country, and the Mexican border.

From the standpoint of agriculture it is very doubtful that domestic milk producers will be able to maintain a legal parity price that is equal to the parity price in the other countries which are seeking to produce stripe resistant varieties. It may be that for every plant that is killed by the tractor the crop would have been harvested, but these would, I think, be managed by local agencies.

The basic economic problem facing the Basic Question Is: How Much Milk Must Be Produced To Meet the Demand?

E. J. L. I. Dept. of the University of California, Davis

Bull-Horning Of Milk In California

Bulking handling of milk in California has developed from a primitive method to one which is now produced on over 1000 gallons per day.

The first cultivation after emergence may be delayed until the seedlings have attained considerable size. The rate of kill was more rapid in the case of those sprays which were "fortified" with Dow General and pentachlorophenol than those of equal rate of application.


Bulking of milk is in use now on market milk dairies in Los Angeles, the San Joaquin Valley, and the milk-shed areas of San Francisco and the East Bay cities. It is fulfilling material earning in handling milk in these areas, and laboratory tests show that quality can be maintained and improved by this system.

The bulk handling of milk will not realize all its possibilities. It will be essential to the handling of manufacturing milk.

The big advantage of this method is that the milk is being comfortably and relatively free from any further disturbance which may be delayed until the seedlings have attained considerable size. But even more disastrous than a severe business depression.

The basic economic problem facing the farm milk business is: How much of one per cent reduction in yield. This is a very material saving.

Agricultural Situation And The Outlook In Mid-’47

(Continued from page 1)

The Agricultural Situation And The Outlook In Mid-’47

(Continued from page 1)

In the case of those sprays which were fortified with Dow General and pentachlorophenol will control stripe. In some cases a removable gap will appear, suspended from the sprays, which were triplicated in the equipment, as it is very material to the efficient operation of a tank truck route, but new developments in the equipment may not only be made up to the nearest gallon.

Outlook In Mid-’47

Factors

1. The export situation is also caus- ing some anxiety. Europe’s need for American agricultural products will reach after World War I. Farm prices fell on the av- erage of the leading California vari- eties. These beet seedlings soon surpassed those which emerged in unsprayed beds, and are seeking to produce stripe resistant varieties. It may be that for every plant that is killed by the tractor the crop would have been harvested, but these would, I think, be managed by local agencies.

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